Description of *Austromitra hayesi* n. sp. (Neogastropoda: Muricoidea: Costellariidae) from South Africa

Hans TURNER

CH-6821 Rovio, Switzerland
hturner@tinet.ch

KEYWORDS. Costellariidae, *Austromitra*, new species, South Africa

ABSTRACT. *Austromitra hayesi* is described from a 70 to 120 m deep rocky sea bottom habitat off Algoa Bay and off Bird Island, South Africa. This new species is distinguished from the similar species *Austromitra distincta* (Thiele, 1925) by flat and stepped whorls with flat ledges on the sutures; from *Austromitra maculosa* Turner & Simone, 1998 by smaller size and more numerous axial ribs which are articulated by distinct spiral threads and grooves, and from an undescribed smooth *Austromitra* sp. by an overall rough sculpture.

INTRODUCTION

The coastal and moderately deep oceanic reaches of South Africa are inhabited by eight known species of Costellariidae: *Vexillum (Pusia) patulum* (Reeve, 1845) (ranging from the N. W. Cape to the Natal south coast), *Austromitra capensis* (Reeve, 1845) (from Table Bay to the Natal south coast), *A. canaliculata* (G. B. Sowerby III, 1900) (Jeffreys Bay to western Transkei), *A. bathyraphe* (G. B. Sowerby III, 1900) (Jeffreys Bay to East London), *A. kowieensis* (G. B. Sowerby III, 1901) (Port Alfred and surroundings), *A. distincta* (Thiele, 1925) (in 70 to 300 m depth off Mossel Bay, Algoa Bay and Transkei), *A. rhodarion* (Kilburn, 1972) (East London to the Natal south coast) and *A. maculosa* Turner & Simone, 1998 (Hout Bay and False Bay). More detailed information on these species is given by THIELE (1925), TURTON (1932), BARNARD (1959), KILBURN (1972), KILBURN & RIPPEY (1982), MARAIS & GRAEVE (1989), TURNER (1993, 1994) and TURNER & SIMONE (1998).

From 1995 until March 1999, Mr. Brian HAYES (Port Elizabeth, S. A.) has provided several lots of small gastropod shells for study. These shells were found dead off Algoa Bay (including Bird Island) in cray traps. Each trap had been let down to the rocky sea bottom at depths 70 to 120 m by a single long rope attached to a surface buoy. The traps were used for catching the rock-lobster *Panulirus homarus* (Linnaeus, 1758) and were usually left at the bottom for 2–5 days at a time. The small gastropod shells, incidentally caught with the cray traps, turned out to belong to the family Costellariidae. Comparison with an extensive Costellarid material (including documentation of types) has proved that 15 specimens out of all lots represent a species new to science which is described in the following pages.

ABBREVIATIONS

BMNH: Natural History Museum, London
NMSA: Natal Museum, Pietermaritzburg
SMF: Senckenberg-Museum, Frankfurt/M
ZMB: Zoologisches Museum der Humboldt-Universität, Berlin

SYSTEMATICS

Superfamily **MURICOIDEA** Rafinesque, 1815

Family **Costellariidae** Macdonald, 1860

Genus ***Austromitra*** Finlay, 1927

Type species by original designation: *Columbella rubiginosa* Hutton, 1873, Recent, New Zealand.

Austromitra hayesi n. sp.
Figs. 1–7

Type material. Holotype (Figs. 1–2) 8.3 x 3.3 mm, aperture length 4.2 mm, collected by cray trap off Algoa Bay, about 100 m (70 m to 120 m) depth, 1997; ex collection B. HAYES, Port Elizabeth, South Africa; deposited in NMSA (V7304/T1717). Paratype #1 (Figs. 3–4) 8.4 x 3.3 mm, aperture 4.2 mm, from the type locality, 14 November 1995; deposited in BMNH (#19990443). Paratype #2 (Fig. 5) 8.0 x 3.3 mm, aperture 3.9 mm, from the type locality, March 1995; in coll. H. TURNER. Paratype #3 (7.9 x 3.3 mm, aperture 3.8 mm) from the type locality, March 1995; in coll. B. HAYES (P.O. Box 804, Port Elizabeth, 6000 South Africa). Paratype #4 (5.6 x 2.4 mm, aperture 2.8 mm, juvenile specimen) from off Bird Island, 100 m depth, in cray trap, dead, 23 Nov. 1995; in coll. H.

TURNER. Paratype #5 (Fig. 6) 8.0 x 3.6 mm, aperture 4.0 mm, from the type locality, 1996; deposited in SMF (#319985). Paratype #6 (7.8 x 3.1 mm, aperture 3.8 mm) from the type locality, 1996; donated to Mr. R. SALISBURY. Paratype #7 (7.7 x 3.5 mm, aperture 3.8 mm, lip broken) from the type locality, 1996; in coll. H. TURNER. Paratype #8 (8.0 x 3.5 mm, aperture 3.8 mm), from the type locality, 1997; in coll. B. HAYES. Paratype #9 (7.4 x 3.0 mm, aperture 3.6 mm, lip broken), from the type locality, 1997; in coll. B. HAYES. Paratype #10 (7.6 x 3.2 mm, aperture 3.7 mm) from the type locality, 1998; in coll. B. HAYES. Paratype #11 (7.0 x 3.2 mm, aperture 3.7 mm, lip broken), from the type locality, 1997; in coll. B. HAYES. Paratype #12 (fig. 7) 6.2 x 2.8 mm, aperture 3.2 mm, juvenile, from the type locality, 1997; in coll. B. HAYES.

Other material studied. Two specimens (7.0 x 3.1 mm, juvenile, apex and lip broken; 6.2 x 2.7 mm, juvenile, bad crack in body whorl, lip broken), from the type locality, 1997; in coll. B. HAYES.

Type locality. Off Algoa Bay, South Africa, depth 70 m to 120 m (in crayfish traps).

Distribution and habitat. Known only from Algoa Bay (including Bird Island), South Africa. The species inhabits a flat, rocky sea bottom in about 100 m depth and lives probably amongst rocks, sponges and soft corals. It shares its habitat with the rock-lobster *Panulirus homarus* (Linnaeus, 1758).

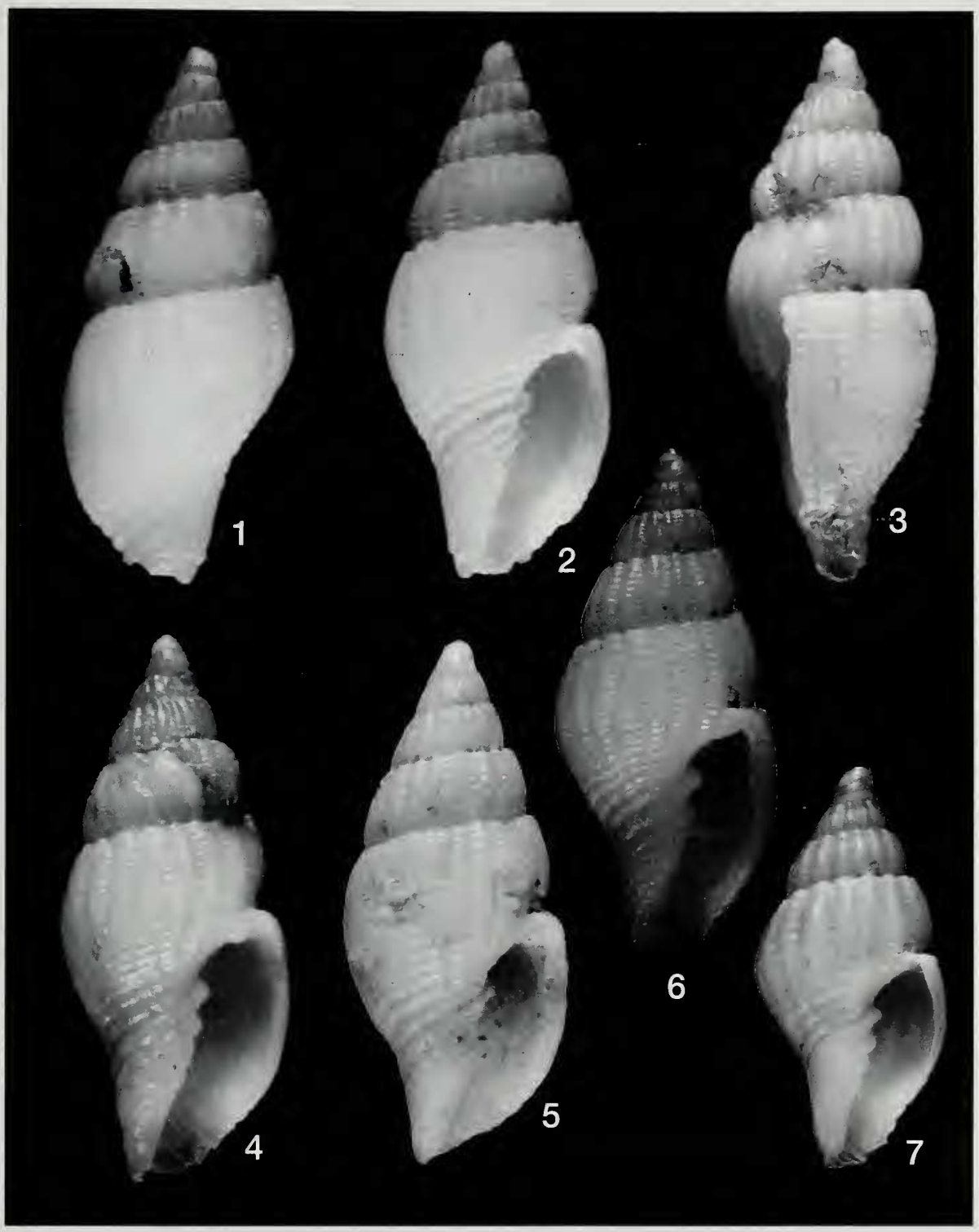
Etymology. Named in honour of Mr. Brian HAYES (Port Elizabeth, South Africa), a well known conchologist and particularly an expert in South African reef molluscs, in appreciation of his merits for malacology.

Description. Shell of medium size for the genus, up to 8–9 mm in length and 3.3–3.6 mm in width, shape fusiform, solid. Protoconch acuminate-involute-paucispiral with 1 1/2 smooth glassy whorls (counted from the origin). Teleoconch with 5 moderately rounded whorls, spire outline likewise moderately convex; sutures form a well developed flat ledge, giving the spire a stepped appearance. Spire whorls are sculptured with rounded, evenly spaced axial ribs which number 16 to 17 on the first whorl and 18 to 19 on the following whorls; on the body whorl less numerous (10 to 14) axials which become indistinct on the anterior half and obsolete towards the aperture. The axial ribs are separated by concave interspaces of about the same width. Spiral sculpture changes noticeably during individual growth; on the first 2 or 3 spire whorls spiral grooves number 8 to 9 and are restricted to the interspaces of the axial ribs while the ribs are smooth; on later spire whorls and on the body whorl spiral sculpture becomes more distinct as the spiral grooves are intersecting the axial ribs, with the result that distinct and regular spiral cords and grooves are evenly developed on the axial ribs as well as in their interspaces. Spiral cords number 10 to 11 on the 4th spire whorl and 23 to 25 on the body whorl where the spirals become somewhat stronger anteriorly and extend almost unchanged onto the siphonal fasciole and the anterior end of the shell. Rostrum slightly recurved to the dorsum, siphonal notch indistinct. Columella with 4 slender folds decreasing in size anteriorly. Aperture moderately wide (width = 31–34 % of length), attenuated at base, not lirate within, posterior aperture angle blunt because of a flat ledge at the suture and a callus pad; inner lip of glazed enamel not elevated from the columella; outer lip thin and crenelated by spiral cords and grooves. Shell overall white to beige. — A peculiar feature of this new species is that about one third of the individuals show healed shell fractures and cracks in various stages of individual growth, even on the very early whorls (e. g. paratype #1).

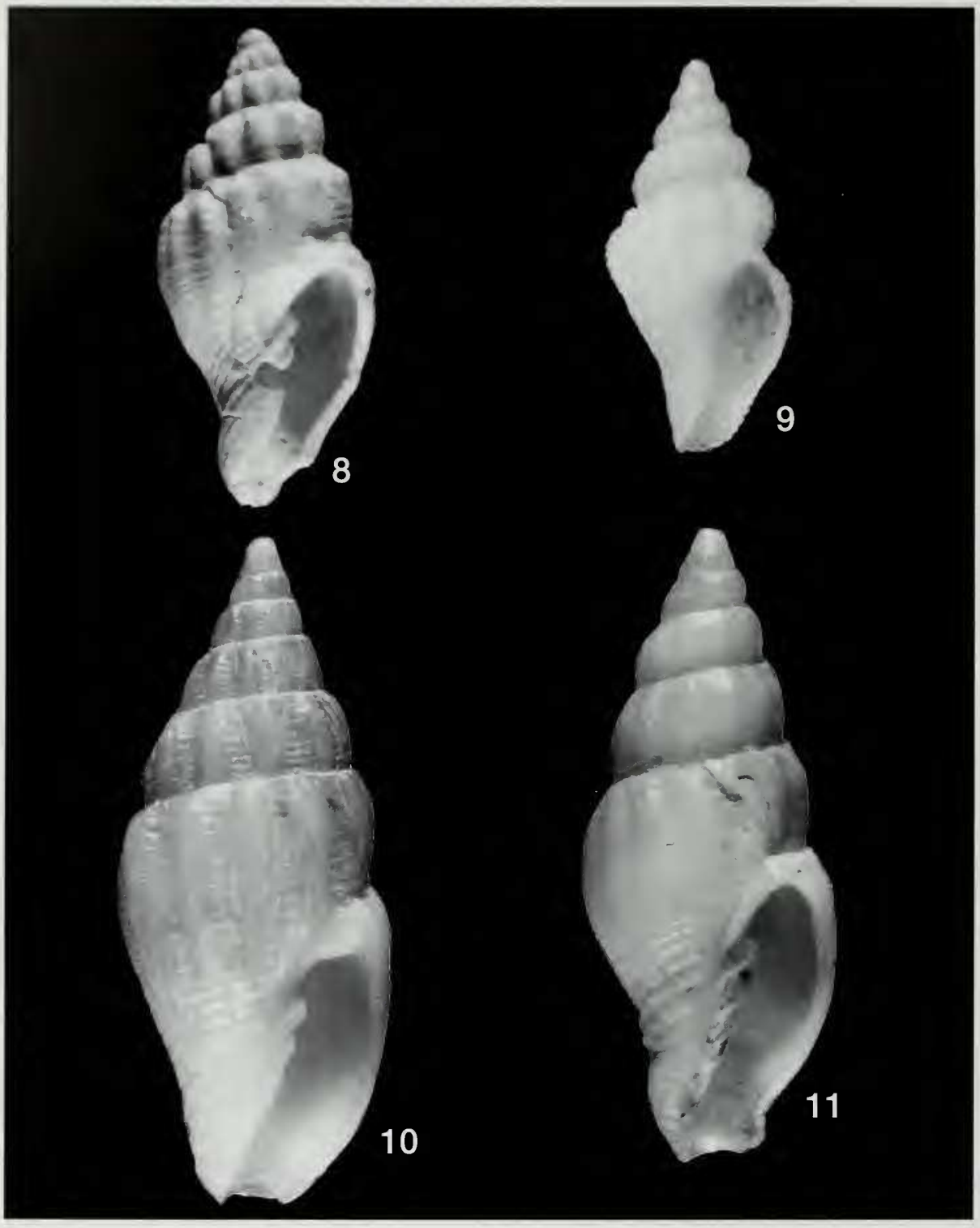
Discussion. This new species is similar to *Austromitra distincta* (Thiele, 1925) (Figs. 8–9). Both species have white shells of roughly the same size and show a similar spiral sculpture with numerous and distinct spiral threads and grooves on teleoconch whorls including the whole body whorl until its anterior end. Both species inhabit the same habitat in the Algoa Bay; beyond this sympatric occurrence, *A. distincta* is known, however, from a much larger range (Cape Agulhas to Transkei, in depths from 70 m to about 300 m). In shell morphology, *A. distincta* differs distinctly by its strongly rounded and shouldered whorls as well as in having fewer and much broader axial ribs. Moreover, *A. distincta* shows distinct spiral threads and grooves over-riding the axial ribs also on the early spire whorls. The well developed flat ledge at the sutures, giving the spire of *A. hayesi* n. sp. a stepped appearance, is missing in *A. distincta*.

A. hayesi n. sp. is superficially similar to a recently described South African species, *A. maculosa* Turner & Simone, 1998 (Fig. 10) (loc. typ.: Hout Bay; new records also from False Bay). Both species may be easily distinguished as *A. maculosa* grows to a larger size (14 x 5.5 mm) and shows a sculpture with fewer axial ribs which are not articulated by distinct spiral threads and grooves. Moreover, *A. maculosa* differs by its peculiar colour pattern of brown blotches below the suture.

A. hayesi n. sp. is superficially similar to a recently described South African species, *A. maculosa* Turner & Simone, 1998 (Fig. 10) (loc. typ.: Hout Bay; new records also from False Bay). Both species may be easily distinguished as *A. maculosa* grows to a larger size (14 x 5.5 mm) and shows a sculpture with fewer axial ribs which are not articulated by distinct spiral threads and grooves. Moreover, *A. maculosa* differs by its peculiar colour pattern of brown blotches below the suture.



Figs. 1–7. *Austromitra hayesi* n. sp. Figs. 1–2. Holotype, NMSA V7304/T1717 (8.3 x 3.3 mm), off Algoa Bay, South Africa, about 100 m depth, dead in crayfish trap, 1997. Figs. 3–4. Paratype #1, BMNH 19990443 (8.4 x 3.3 mm), from the type locality, 14 Nov. 1995. Fig. 5. Paratype #2, H. TURNER coll. (8.0 x 3.3 mm), from the type locality, March 1995. Fig. 6. Paratype #5, SMF #319985 (8.0 x 3.6 mm), from the type locality, 1996. Fig. 7. Paratype #12, B. HAYES coll. (6.2 x 2.8 mm, juvenile), from the type locality, 1997.



Figs. 8–9. *Austromitra distincta* (Thiele, 1925). Fig. 8. Lectotype, ZMB (7.3 x 3.2 mm), from Agulhas Bank, 155 m depth ("Valdivia" Stat. 104). Fig. 9. Juvenile specimen, M. MARROW coll. #10699 (6.2 x 2.6 mm), from off Nthlonyane River, Transkei, dredged at 300 m depth. **Fig. 10**. *Austromitra maculosa* Turner & Simone, 1998. Holotype, NMSA V4687/T1452 (13.4 x 5.4 mm), from Houtbaai near Kommetjie at 36 m depth, west coast of Cape Peninsula, South Africa. **Fig. 11**. *Austromitra* sp. H. TURNER coll. (9.9 x 3.7 mm), from Algoa Bay, South Africa, ex pisce, 25 Oct. 1995.

A. hayesi n. sp. was also compared with an obviously undescribed species from the Algoa Bay, *Austromitra* sp. (Fig. 11), which was brought to my knowledge recently and is still under study. Both species are similar in size and shape, but differ distinctly as *A. hayesi* shows a rough sculpture of axial ribs and spiral cords on all teleoconch whorls whereas the undescribed *Austromitra* sp. has an almost smooth shell with obsolete flat and wide, almost obsolete axial ribs on the spire whorls and with several rounded spiral threads only at the base of the body whorl.

ACKNOWLEDGEMENTS. I am greatly indepted to Mr. Brian Hayes (Port Elizabeth, South Africa) who generously gave all specimens of the new species at my disposal and who informed me in detail of the habitat data.

REFERENCES

BARNARD, K. H. 1959. Contributions to the knowledge of South African marine Mollusca. Part 2. Gastropoda: Prosobranchiata: Rachiglossa. *Ann. South African Mus.* 45: 1–237.

KILBURN, R. N. 1972. Taxonomic notes on South African marine Mollusca (2), with the description of new species and subspecies of *Conus, Nassarius, Vexillum* and *Demoulia*. *Ann. Natal Mus.* 21(2): 391–437.

KILBURN, R. N. & E. RIPPEY. 1982. *Sea Shells of Southern Africa*. MACMILLAN South Africa, Johannesburg: 249 pp., 46 colour-pls.

MARAIS, J. P. & F. GRAEVE. 1989. The genus *Austromitra* in South Africa. *Strandloper* no. 219: 1–3.

THIELE, J. 1925. Gastropoda der Deutschen Tiefsee-Expedition. II. Teil. *Wiss. Ergebn. Dtsch. Tiefsee-Exped. "Valdivia"*, 17(2): 348 pp., 34 Taf.

TURNER, H. 1993. Ungewöhnliche und neue Mitroidea aus dem Indopazifik. Teil 2. *Club Conch. Infn* 25(2): 82–111, 4 Farbtaf.

TURNER, H. 1994. Ungewöhnliche und neue Mitroidea aus dem Indopazifik. Teil 3. *Club Conch. Infn* 26(1): 96–111, 2 Farbtaf.

TURNER, H. & L. R. L. SIMONE. 1998. *Austromitra maculosa*, a new species of Costellariidae from South Africa. *Arch. Molluskenk.* 127(1/2): 93–101.

TURTON, W. H. 1932. *The Marine Shells of Port Alfred S. Africa*. Oxford Univ. Press, London: XVI + 331 pp., 72 pls.